

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2000-235900

(43)Date of publication of application : 29.08.2000

(51)Int.Cl.

H05H 1/46
H01L 21/205
H01L 21/3065

(21)Application number : 11-035953

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(22)Date of filing : 15.02.1999

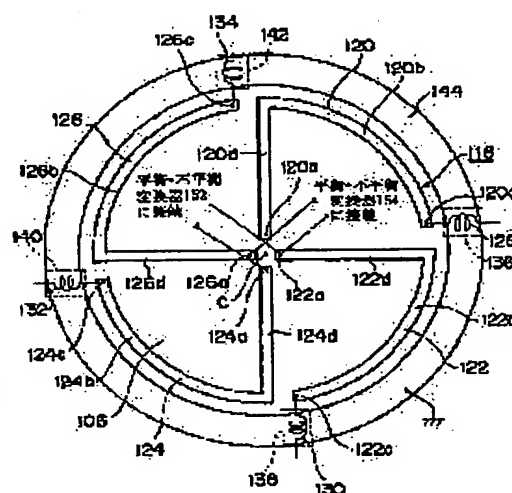
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(54) PLASMA TREATMENT DEVICE

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a plasma treatment device capable of generating plasma by electromagnetic wave of high frequency.

SOLUTION: An antenna 118 of non-grounded type is disposed on a dielectric wall 106 forming the ceiling part of a treatment chamber of an etching device. The antenna 118 comprises first to fourth antenna elements 120, 122, 124, 126 each having an electrical length of $\lambda/4$ (where λ is the wavelength of high-frequency power) and disposed point-symmetrically to each other about a reference point C on the dielectric wall 106. When power of high frequency of 100 MHz or higher with a phase shifted by 90° for every neighboring elements is applied to the first to fourth antenna elements 120 to 126 pairs in point-symmetry of the first to fourth antenna elements 120 to 126 resonate at $\lambda/2$, and an electromagnetic wave of the same frequency as the power is oscillated and introduced into the treatment chamber via the dielectric wall 106. A treatment gas is dissociated into plasma by the electromagnetic wave, and a wafer in the treatment chamber is etched.



LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]